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ABSTRACT

Asthma is the most common chronic childhood condition and a leading cause of school absences. With asthma occurring in almost every classroom in America, this curriculum guide, developed for use by elementary school children, suggests that teachers integrate an asthma lesson into a comprehensive health education curriculum. The lessons include suggestions for math, science, art, and language arts and can be integrated into the social sciences as they relate to getting along with others and learning about community resources. There are two 30-minute lessons for grades K-3 and 4-6. The lessons are designed to: (1) develop a basic understanding of asthma and help correct misinformation; (2) inform students about appropriate actions that can help people with asthma; and (3) provide resources to share with parents and other family members. In addition, the resource section provides information to help teachers learn more about asthma before teaching the lessons. Pre- and post-tests for grade K-3 and grade 4-6 students, a letter to parents written in both English and Spanish, and activity sheets including hidden pictures, mazes, crosswords and scenarios are included. (LL)

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Asthma Awareness

Curriculum for the Elementary Classroom

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Asthma Awareness

Curriculum for the Elementary Classroom

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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National Heart, Lung, and Blood Institute
National Asthma Education Program

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INTRODUCTION

Asthma is the most common chronic childhood condition and a leading cause of school absences. More than 3 million American children (6.1% of all children) have asthma. This means that in a classroom of 30 children, two children are likely to have asthma. Unlike many other childhood illnesses, both hospitalizations and deaths due to asthma are increasing. Recent scientific advances have led to changes in our understanding and treatment of asthma. While asthma cannot be cured, it can be controlled so that children can be active and healthy.

With asthma occurring in almost every classroom in America, it is important that you, the teacher, integrate an asthma lesson into the regular curriculum on body systems. The content information on asthma can play a valuable role in reducing the problems experienced by children with asthma when their condition is poorly understood by those around them. The activities, especially those on decision making, are relevant to all students.

Developed for use with elementary school children, these lessons are easily integrated into a comprehensive health education curriculum and/or into science as it relates to body systems and the environment. They can also be integrated into social sciences as they relate to getting along with others and learning about community resources. The lessons include suggestions for math, art, and language arts activities.

There are two lessons for grades K–3, each requiring about 30 minutes per session. Instruction for grades 4–6 are also divided into two lessons, each about 30 minutes in length. Lesson length is dependent on your choice of teaching strategies. Lessons will be longer if you employ several interactive strategies or supplemental activities such as puppet shows, films, and readings.

The lessons are designed to:

- ❑ Develop a basic understanding of asthma and help correct misinformation.
- ❑ Inform students about appropriate actions that can help people with asthma.
- ❑ Provide resources to share with parents and other family members.

In the resource section, you will find information to help you learn more about asthma before teaching the lessons. Included also are resources for additional information for you, your students, and their parents.

Lesson One

Students will be able to:

1. Describe asthma as something that makes breathing hard for children with asthma.

2. Explain that asthma can be controlled so that children can live active lives.

3. Describe asthma as something that cannot be passed from one person to another like a cold.

4. Identify two things that can make asthma worse, such as cigarette smoke, furry or feathered pets, colds, playing hard.

Lesson Two

Students will be able to:

1. State that people with asthma can stay healthy most of the time if they do these things: stay away from things such as cigarette smoke or furry pets that make their asthma worse; go to the doctor; and take medicine.

2. Identify two things classmates can do to help a person who has asthma such as including him or her in activities, not teasing him/her, staying calm in an emergency, getting help if needed, and helping the student stay away from things that make his or her asthma worse.

Lesson One

Students will be able to:

1. Define asthma as a condition that causes difficulty with breathing.
2. Explain that asthma can be controlled to allow children to be active and healthy.
3. Describe asthma as a condition that affects the airways in the lungs.
4. Explain that asthma cannot be caught like a cold or infection.
5. Describe the airways in the lungs as the part of the respiratory system affected by asthma.
6. Describe four signs and symptoms of an asthma episode such as coughing, wheezing, and shortness of breath, and chest tightness or chest pain.
7. List four things that can make asthma worse such as exercise, cigarette or other tobacco smoke, pollens, animals, colds, flu, and cold air.

Lesson Two

Students will be able to:

1. State that asthma can be controlled when someone with asthma avoids the things that can make his/her asthma worse.
2. Describe children with asthma as active, healthy people who can run, play, and go to school.
3. Identify the things classmates can do to help a child who has asthma such as not tease, include the child with asthma in activities, and remind the child to take his/her medicine, stay calm in case of an emergency, get help if needed.
4. State that children who think they or a friend might have asthma can seek help from the people they live with, the school nurse, a doctor, or teacher.

Lesson One for Grades K–3
What Is Asthma?

25 Minutes

On Your Mark

Objectives

Students will be able to:

1. Describe asthma as something that makes breathing hard for children with asthma.
2. Explain that asthma can be controlled so that children can live active lives.
3. Describe asthma as something that cannot be passed from one person to another like a cold.
4. Identify two things that can make asthma worse, such as furry or feathered pets, cigarette smoke, colds, playing hard, and cigarette smoke.

Get Set

Teacher Preparation

❑ Make copies of the pre/post test

❑ Make copies of the *Things That Make Asthma Worse* cards

❑ Make copies of *Furry Pet* sheet

❑ Make copies of *Hidden Picture*

❑ Read *Resources for Teachers*

❑ Vocabulary words:

Asthma: A condition that affects the airways in the lungs that makes it hard to breathe. Asthma cannot be caught like a cold. Some people develop the symptoms of asthma when they are very young and others do not have the symptoms or signs of asthma for many years. People can control their asthma and live active, healthy lives.

Asthma Symptoms: Coughing, wheezing, feeling short of breath, feeling pain or tightness in the chest.

Go

Classroom Activity: Administer and collect Pre-test.

If instructional time is limited, you may want to omit the pre/post test. Depending on your students' reading ability, you may want to administer the test orally. Use the ***Check for Understanding*** questions in the lesson to ensure that the objectives have been met.

Focus the Learner

"I'd like you to take in a big breath. Now let the air out. Put your thumbs up if that was easy. Put your thumbs down if it was hard. Most of the time breathing is easy."

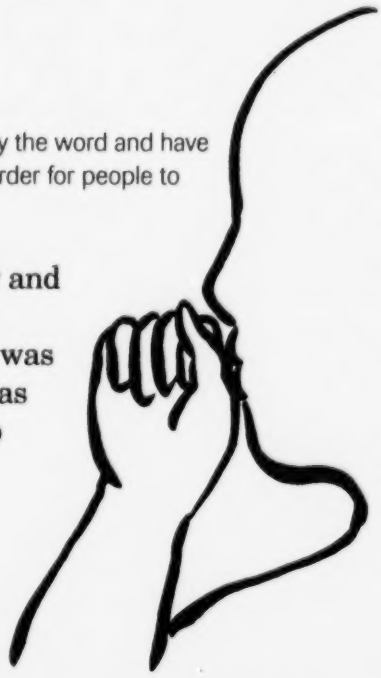
"Breathing is very important. All the parts of our body need air to work."

"By the time we finish this lesson, you'll be able to tell me about something called asthma, which can make breathing hard. You'll learn about things that can make asthma worse for someone who has it. You'll also learn that you cannot catch asthma from another person."

Instruction

Classroom Activity: Write the word *asthma* on the chalkboard. Say the word and have the students repeat it. Explain to students that asthma can make it harder for people to breathe. Ask students to breathe in and out normally.

"Now, make a fist and press it firmly to your lips. Try and breathe in and out through your mouth now. Was it harder or easier to breathe with your fist there? If it was easier or about the same put your thumbs up. If it was harder, put your thumbs down. It's usually harder to breathe."



Additional Activity: As alternatives to the lecture format here, you can use a story, puppet show, or video to provide basic asthma information to your students. See the Reference Section for resources. An alternate activity for demonstrating breathing difficulty is presented in Lesson One for Grades 4–6.

"People with asthma sometimes have a hard time getting air in and out of their lungs. When this happens they may cough or wheeze, which is breathing with a noisy sound. Or they may feel short of breath or have pain or a tight feeling in their chest. Why do some people have asthma? People who have asthma are born with it. Sometimes, people have the signs of asthma when they are little babies, but sometimes the signs do not show up until they are much older. Asthma is not something that you can "catch" from someone else. It is not something that can be passed from one person to another like a cold. Many children have asthma."

"Most of the time, we cannot tell if someone has asthma. People with asthma can run and play just like everyone else. But sometimes they have trouble breathing in and out. Sometimes, it's just a little harder to breathe; sometimes, it's very hard. It depends on how serious their asthma is.

"Certain things can make asthma worse and make it hard to breathe. Pets that have fur or feathers can make asthma worse. Can you name some furry or feathered pets?" *Responses may include dogs, cats, hamsters, rabbits, parrots, and parakeets.*

Classroom Activity: Pass out the *Furry and Feathered Pet* sheets. Give the directions: "On this sheet there are lots of animals. Put a circle around the animals that have fur or feathers." You can check the sheets or have partners check sheets. As an alternative you can use the Furry and Feathered Pet sheet as a transparency to stimulate group discussion.

"Other things can also make children's asthma get worse. When children with asthma get a cold or the flu, their asthma might get worse."

"Do you ever have trouble breathing when you play hard? Playing hard can make it harder to breathe for anyone, but it makes it even harder for someone with asthma. Most of the time, children with asthma can play like everyone else. Sometimes, they need to take a special medicine before they run or play hard."

Classroom Activity: Use the *Things That Make Asthma Worse* cards to illustrate your presentation. As time permits, you may discuss other things that can make asthma worse.

Background Note: Things that make asthma worse include colds and flu; allergies to tree pollen, grass pollen, dust and cockroach allergen; cigarette and other tobacco smoke; cold air; changes in the weather; and laughing or crying hard.

Background Note: Furry or feathered pets should not be kept in the classroom if there are students with asthma. Although foods may cause allergic and asthmatic reactions in some children, scientist now think that it is not common that foods provoke asthma symptoms. When reactions to food do occur, they may be very sudden and severe.

Episodes can sometimes be brought on by the physical effects of strong emotions such as laughing, crying or strong emotional distress. However, it is important to know that asthma is not caused by emotional factors such as a troubled parent-child relationship. Some people think asthma is "all in one's head." This is wrong. It is a disease in the airways.

Additional Language Arts Activity: Use the word *asthma* as a vocabulary and spelling word. Have students use the word in a sentence. As a class, write a story about someone with asthma.

Check for Understanding

Classroom Activity: For older children, have them write their answers or respond orally and you write on the board.

"Draw a picture of what you think it is like to have asthma." *Pictures might include: a person with asthma who has a hard time breathing; a person taking a special medicine before playing hard.*

"Draw a picture of some things that can make asthma worse." *Pictures might include: furry pets, cigarette smoke, colds, playing hard, allergies to grass, trees and dust.*

Additional Activities: Have children find the things that make asthma worse in the *Hidden Picture* worksheet. As an in class or homework extension activity, ask each child to draw a picture or collect magazine pictures of the things at home that make asthma worse. Give each child or team an outline drawing of the school or classroom. Have them draw the things that make asthma worse that they find in each location.

Closure for Lesson One

"Today we've learned that some people are born with asthma. It makes breathing harder sometimes. We have also learned furry or feathered pets, cigarette smoke, colds and flu, playing hard, and allergies can make asthma worse."

Lesson Two for Grades K–3
How Can I Help?
25 Minutes

On Your Mark

Objectives

Students will be able to:

1. State that people with asthma can stay healthy most of the time if they do these things: stay away from things such as furry pets or cigarette smoke that make their asthma worse; go to the doctor; and take medicine.
2. Identify two things classmates can do to help a person who has asthma such as including him or her in activities, not teasing him/her, and helping the student stay away from things that make his or her asthma worse, staying calm in an emergency, getting help if needed.

Get Set

Teacher Preparation

❑ Make copies of the Post-Test if not done for Lesson One

❑ Make copies of the *Asthma Maze*

Go

Focus the Learner

Classroom Activity: Review Lesson One and any homework assignment. "Yesterday, we talked about asthma. We learned that some people are born with asthma. It makes breathing harder sometimes. We also learned that furry and feathered pets, colds, and playing hard can make a person's asthma get worse." Display the ***Things that Make Asthma Worse*** cards.

"Today, you will be able to name two things that people with asthma can do to stay healthy."

Instruction

"If someone in our class had asthma, what might happen if we had a hamster in our classroom?" *Responses may include: make it harder for the person with asthma to breathe, make them cough or wheeze.*

"One way children with asthma can stay healthy is to stay away from things that make their asthma worse. "If someone in our class had asthma, we should not have a furry pet. If our classroom wanted to learn about animals, what could we do?" *Responses may include: have a cricket or a lizard for a classroom pet, learn about furry animals through books and videos, keep any furry pet far away from the person with asthma.*

"A cold or flu can also make asthma worse. One of the best ways to avoid colds and flu is to wash your hands regularly. This is a good idea for all children, not just those with asthma."

"Playing hard can make asthma worse, but since children need to play and exercise for healthy bodies, some children with asthma take medicine before they play hard."

Background Note: A child with asthma may need to take medicine and wait awhile before starting to play. Just because a child feels short of breath when exercising does not mean s/he has asthma. See the Resources for Teachers Section for additional information if you think one of your students may have asthma.

"Other important ways that children with asthma stay healthy is to see their doctor and take medicine to keep their lungs breathing easily. Many children with asthma take medicine every day."

Background Note: Scientific advances have changed our understanding of asthma. We now know that asthma is not a condition with isolated episodes (attacks). It is a chronic condition that makes the airways overly sensitive. Chronic inflammation (swelling inside the airways) is the main contributor to this airway sensitivity. Treatment for people with anything more than mild, occasional episodes includes daily therapy with medicines which prevent or reduce inflammation. This helps reduce the sensitivity of the airways and prevent episodes. Doctors usually prescribe this medicine so students can take it before and after school, but sometimes it is necessary to take preventive medicine during school hours. Both medicine taken on a regular preventive basis *and* medicine needed to control an asthma episode should be available and convenient for the student at school. Many students can even carry and self-administer their medicine. If your students with asthma have difficulty getting their medicine, please discuss this with the parents, school nurse, and school principal. Children take medicine in different ways, including pills, inhalers, syrups and nebulizers. Students should never share medicines.

Classroom Activity: Pass out the *Asthma Maze* sheet. Either as a group, in pairs, or as individuals complete the maze by avoiding things that make asthma worse. Check the student responses and provide additional information as appropriate.

"If you ever wondered if you might have asthma, you should talk to your Mom or Dad or the person you live with. You also can talk with the school nurse. To find out for sure, your parents or the people you live with should take you to the doctor."

Additional Activity: You may want to correlate this lesson with your instruction about community resources and helping professionals such as nurses, doctors, etc.

If there is a child in the class with asthma, s/he may volunteer to talk about his/her asthma and show his/her medicine and peak flow meter. A peak flow meter is a simple, hand held device that measures how fast air can move out of the lungs. Children are often curious about asthma medicines. It is a good idea to invite the school nurse, a volunteer from a health agency or a parent to come and give a demonstration about peak flow meters and asthma medicines.

Check for Understanding

"Name at least one thing people with asthma can do to stay healthy." *Responses may include: stay away from things that make their asthma worse, see the doctor, take medicine regularly, and may, if necessary, take medicine before running and playing hard.*

Closure

"We've learned that people with asthma can run and play and be healthy if they avoid things that make their asthma worse and take the medicine their doctor gave them."

Focus the Learner

"What are some things you can do to be nice to your friends?" Ask for a few responses. You may want to record responses on the board. *Responses may include: play with them, say kind things to them, sit by them, help them with things.*

"People with asthma want to be treated nicely just like anyone else."

"We're going to talk about some nice things we can do for people with asthma."

Instruction

Classroom Activity: For students who are already familiar with a problem solving model, you can use the format and scenarios found in Lesson Two of the grade 4-6 curriculum. For children who have not yet been introduced to such a format, use the material in this lesson.

Introduce and read the following scenario to the class:

"Betty, a second grader, has asthma. She is supposed to take a special medicine before her PE class and recess so that she can run and play. Sometimes the other kids tease her about taking her medicine. They say mean things. One kid called her a sissy."

"How do you think Betty feels?" *Responses may include sad, hurt, angry, embarrassed.*

"What could the other children in Betty's class do to be nice?" *Responses may include: quit teasing and calling names, play with her, include her in games, remind her to take her medicine, don't tease her about taking her medicine.*

Additional Activity: As time permits, introduce the other scenarios to help children explore ways they can be supportive of children with asthma. Include discussion about helping children avoid things that make their asthma worse, in the classroom, on the playground, or even outside of school while visiting each other's homes.

Have the students draw a picture and/or write a story about what they can do to help a child with asthma. Display completed pictures and stories on the bulletin board.

Additional Art or Language Arts Activity: Have the class write and illustrate a story about a child their age with asthma in the form of a "Big Book." Children could also make posters that describe how to help children who have asthma. If a child with asthma has to go to the hospital, the class could make a get well card or story. Another activity could be drawing pictures of a classroom or bedroom that is free of things that make asthma worse but is still fun!

Finish

Closure

"Today you learned that people with asthma should stay away from the things that make their asthma worse and take medicine if their doctor tells them to. That way they can run and play. You also learned that boys and girls with asthma want to be treated nicely just like everyone else. It's important not to tease them about their asthma or call them names. You should include them in your games. You can also be helpful by reminding them to take their medicine if they need to take it before playing hard."

Classroom Activity: Administer and collect Post-Test. Review correct responses.

Lesson One for Grades 4–6
What Is Asthma?

30 Minutes

On Your Mark

Objectives

Students will be able to:

1. Define asthma as a condition that causes difficulty with breathing.
2. Explain that asthma can be controlled to allow children to be active and healthy.
3. Describe asthma as a condition that affects the airways in the lungs.
4. Explain that asthma cannot be caught like a cold or infection.
5. Describe the airways in the lungs as the part of the respiratory system affected by asthma.
6. Describe four signs and symptoms of an asthma episode such as coughing, wheezing, and shortness of breath, and chest tightness or chest pain.
7. List four things that can make asthma worse such as exercise, cigarette or other tobacco smoke, pollens, animals, colds, flu, and cold air.

Get Set

Teacher Preparation

- ❑ Make copies of the pre/post test
- ❑ Obtain overhead equipment
- ❑ Make overhead ***Respiratory System and Asthma***
- ❑ Make copies of ***What Makes Asthma Worse*** cards
- ❑ Make copies of ***Classroom Scene: Find The Things That Make Asthma Worse***
- ❑ Read Resources for Teachers
- ❑ Obtain one unwrapped straw per student
- ❑ Write vocabulary words and definitions on the board before the lesson

❑ Vocabulary Words:

Asthma: A condition that affects the airways in the lungs causing difficulty with breathing. Asthma cannot be caught like a cold. Some people develop the symptoms of asthma when they are very young, and others do not have the signs and symptoms of asthma for many years. People can control their asthma and live active, healthy lives.

Allergies: A condition resulting in symptoms such as sneezing, itchy eyes, and stuffy nose. People with allergies react to pollens, animals, and things in dust that don't cause a reaction in most people.

Disease: A condition or illness with a specific set of physical signs and symptoms.

Episode: Any event or series of events.

Symptoms or Signs: Physical changes or feelings that show a disease or condition exists.

Asthma Episode: An event or series of asthma symptoms which may include coughing, wheezing, shortness of breath, and difficulty breathing.

Respiratory System: The parts of the body involved with breathing. Includes the nose, throat, airways, and the lungs.

Go

Classroom Activity: Administer and collect Pre-test. If instructional time is limited, you may want to omit the pre/post test. Use the *Check for Understanding* questions in the lesson to determine if the objectives have been met. Depending on your students' reading ability, you may want to administer the test orally.

Focus the Learner

Classroom Activity: Have students hold their breath for a little while.

"What happens if you hold your breath?" or "What happens if we do not get air into our bodies?" *Responses may include: "We need air so that our bodies can work" or "Without air we would die."*

"When we finish this lesson, you'll be able to describe asthma. You will also be able to identify the parts of the respiratory system (or body, if you have not yet introduced body systems) affected by asthma."

Instruction

Classroom Activity: Pass out one unwrapped straw to each student.

"Let's see how it might feel to have difficulty breathing. Close your lips around the straw. Slowly and quietly breathe in and out through the straw. Put your thumbs up if you think it is fairly easy to breathe this way. Put your thumbs down if you think it's difficult. Most of you students should find it easy."

"Most of the time we can breathe in and out easily because our airways are open. Now close your mouth around the straw. With your finger, pinch the straw mostly closed in the middle. Try breathing in and out again. Put your thumbs up if it's easier or about the same as before. Put your thumbs down if it's harder. Most of you students should find it more difficult."

"When you pinch the straw, it makes it harder to breathe. How would it work to breathe through a straw if it were filled with a thick liquid like a milkshake?" *Responses include: "The thick liquid would make it very difficult to get air through the straw."*

Classroom Activity: Display the transparency *Respiratory System and Asthma.*

Using the transparency, review the parts of the respiratory system, pointing out the nose, throat, and the airways in the lungs. Have students label parts on the left side of the diagram. Review the right side of the diagram, which illustrates the airways during an asthma episode. Note the difference in the swelling of the lining of the airways during an asthma episode.

"How do the airways in the lungs look different on the right side of the diagram?" *Responses should include that the airways are not as big and this makes it hard to get air in or out of the airway.*

"In an asthma episode—some people call it an attack—the lining of the airways in the lungs get thicker and swollen. The airways get squeezed by the muscles around the airway. This makes the airways narrower, just like the straw when you squeezed it. The airways in the lungs also get filled with a thick liquid called mucus. These changes make it difficult to breathe. The more the airways are pinched by the muscles, swollen and filled with mucus, the more difficult it is to breathe. It is something like the feeling you get when you have been running very, very hard. You have a hard time breathing in and out and feel like you cannot catch your breath."

"The straw is like the airways in our lungs. Most of the time, children with asthma can breathe easily because their airways are open. They can run and play and go to school just like other children. But sometimes, the airways in their lungs get squeezed like we did with the straw. The inside of the airways swell and get filled with a thick liquid called mucus. The child with asthma has difficulty moving the air in and out of the lungs. This is called an asthma attack or episode."

Check for Understanding

"What part of the respiratory system (or body) is affected during an asthma episode?" *Response should be: the airways in the lungs.*

"In what way?" *Responses may include: the airways get swollen and filled with mucus, and squeezed. The narrow airways make it hard to breathe in and out.*

Closure

"We've learned what asthma is and that an asthma episode makes breathing more difficult. We also have learned what parts of the respiratory system are affected by asthma."

Focus the Learner

"What might a child having an asthma episode look like or sound like?" *Responses may include: "They sound like they are coughing" or "They look like they cannot catch their breath"*

"In the next part of the lesson, you'll learn the signs and symptoms of asthma and what can bring on an asthma episode."

Instruction

"The physical changes and feelings that show that someone has a disease or condition are called signs and symptoms. For example, how can you tell if you're getting a cold?" *Responses may include coughing, sneezing, or runny nose.*

"We call these the signs and symptoms of a cold. They tell us that we have a cold. Most diseases and conditions have signs and symptoms. There are also signs and symptoms for asthma. The signs and symptoms happen when the person is having an asthma episode. What is one sign or symptom of asthma?" *Responses may include coughing, being short of breath, wheezing or noisy breathing, tightness or pain in the chest, gasping, trouble talking or walking because they have trouble breathing.*

"The main symptoms of asthma are coughing, wheezing, and shortness of breath and tightness in the chest. They do not happen all at once. Some people may have only one sign such as coughing."

"Some symptoms may not be seen by others, but the person with the asthma episode would feel them. An example is chest tightness which might feel like having a heavy weight on the chest."

"Children with asthma do not always have difficulty breathing. Some children have very mild asthma. They are only bothered every now and then, sometimes only once a week or only a few times a year. Other children have very serious asthma. They can be bothered a lot or even most of the time unless they take medicine. A few children with asthma are bothered by their asthma much of the time even when they take their medicine. But *most* children with asthma can play and go to school just like children without asthma if they, their family, and a doctor work together and take care of their asthma."

"How do you think people get asthma?" *Possible responses might include: you have a bad gene, you catch it from someone, your lungs are hurt somehow.*

"Scientist don't know exactly how people get asthma. They do know that most people with asthma were born with the chance to get it at some time in their life. Some people develop the signs and symptoms of asthma when they are very young; others do not develop symptoms until they are older. Asthma is not something that is passed from one person to another. You cannot catch it like a cold or infection. People with asthma have sensitive airways. Their airways can be very sensitive to ordinary things in the air. Have you ever walked into a room being painted? Do you remember the strong smell? Have you ever been near someone smoking? How did that feel?" *Responses include: made me cough, hurt my eyes, made my chest hurt.*

"People with asthma may get these feelings such as coughing and wheezing more easily than people who don't have asthma. Also, the airways in their lungs are more sensitive to some things that usually don't bother people without asthma. When they are around these things their asthma gets worse and their airways get even more sensitive. Their airways get pinched and clogged. They have a hard time breathing in and out. Their asthma gets worse and their airways get even more sensitive. There are lots of different things that can make asthma worse."

Classroom Activity: If time allows break into small groups at this point. Instructions to the group: "Many of you probably know someone with asthma. Think about the things that make that person have trouble with his/her asthma. In each work group choose a recorder and brainstorm a list of things which can make asthma worse." Use the ***What Makes Asthma Worse*** cards to check the brainstorm lists.

Alternatively, continue the lesson as a teacher presentation. Use the ***What Makes Asthma Worse*** cards to illustrate the presentation.

"The ordinary things that bother most people with asthma include: dust from pillows, beds, couches, carpets; other things that bother people with asthma are cigarette smoke; allergies to furry or feathered animals such as cats, dogs, hamsters, or birds; allergies to tree and grass pollen; allergies to cockroaches; colds or flu; running or playing hard; cold air; changes in the weather; strong smells; chemical fumes; and laughing or crying hard."

Background Note: Anyone, even if they do not have asthma, may experience a very temporary shortness of breath after heavy exercise. Point out to students that this shortness of breath is different from the shortness of breath in an asthma episode. Even after heavy exercise a child without asthma recovers easily and has no other symptoms. Usually, the child with asthma will need treatment to recover from symptoms. Be sure that students understand that just because people have difficulty breathing during exercise or experience coughing does not necessarily mean that they are having an asthma episode.

Episodes can sometimes be brought on by the physical effects of strong emotions such as laughing, crying or strong emotional distress. However, it is important to know that asthma is not caused by emotional factors such as a troubled parent-child relationship. Some people think asthma is "all in one's head." This is wrong. It is a disease in the airways.

Additional Activity: Have a magazine picture hunt for things that make asthma worse. Student can work individually or in teams to identify and share pictures. Another additional activity is the ***Classroom Scene: Find The Things That Make Asthma Worse*** page. Pass the page out, have the students complete the page and then discuss it.

Closure

Classroom Activity: Divide students into small groups. Have each group brainstorm a list of things that make asthma worse. From the total group, develop a list that students can use to check at home for things that can make asthma worse. Have each student suggest "solutions" for problems they find at home.

"Today we learned: asthma is a condition that some people are born with which affects the airways in the lungs. During an asthma episode, the airways can be pinched and clogged, making it harder for a person to breathe. They have signs and symptoms such as coughing, wheezing, and tightness of the chest. We also learned that dust, cigarette smoke, exercise, cold air, colds, and allergies can bring on an asthma episode. Tomorrow you will learn what someone with asthma can do to stay healthy and how you can be helpful to someone with asthma."

Additional Language Arts Activity: Use the vocabulary words as spelling words. Have students use them in a sentence and write a story about a person with asthma using the lead phrase, "My best friend just found out he/she has asthma..."

Lesson Two for Grades 4–6
How Can I Help?
30 Minutes

On Your Mark

Objectives

Students will be able to:

1. State that asthma can be controlled when someone with asthma avoids the things that can make his/her asthma worse.
2. Describe children with asthma as active, healthy people who can run, play, and go to school.
3. Identify the things classmates can do to help a child who has asthma such as not tease, include the child with asthma in activities, and remind the child to take his/her medicine, stay calm in case of an emergency, get help if needed.
4. State that children who think they or a friend might have asthma can seek help from the people they live with, the school nurse, a doctor, or teacher.

Get Set

Teacher Preparation

- ❑ Make copies of the Post-Test if not done for Lesson One
- ❑ Prepare ***What Makes Asthma Worse*** cards if not done for Lesson One
- ❑ Make copies of the ***Scenarios***
- ❑ Make copies of the ***Crossword Puzzle***
- ❑ Write vocabulary words from Lesson One on the board
- ❑ Write the following questions on the board:

  "What part of the respiratory system is affected by asthma?"

  "Describe in your own words what happens to the airways."

  "Name one thing that can make asthma worse."

Go

Focus the Learner

Classroom Activity: Guide children, through either small group or whole class discussion, to discover the special plans and actions that they take to deal with the hot sun. This will set the stage for learning about the plans and actions needed to protect a child from an asthma episode.

"Think about going on an all day trip to a park where there will be swimming and games outside. The weather report says it is going to be very sunny and hot. What special plan or actions will you and your friends take so that you can have a fun, safe trip?" *Responses may include: food, swim suit, equipment for the games, sunscreen, hats, a shirt to cover up, extra water.*

"We have to make special plans and take extra things to avoid getting thirsty or sunburned."

"Today you will learn what special plans and actions children with asthma can do to avoid or to control asthma episodes so they can be as active as children who do not have asthma. You'll also learn how we can help someone who has asthma."

Instruction

Classroom Activity: Review Lesson One. Elicit responses to the following questions and put correct response on the board and review. Use the appropriate *Respiratory System and Asthma* transparency and *What Makes Asthma Worse* cards to reinforce the correct answers.

"Yesterday, we talked about asthma. Turn to your partner and take turns answering the three questions on the board:

"What part of the respiratory system is affected by asthma?" *Response: the airways in the lungs.*

"Describe in your own words what happens to the airways." *Response: the airways get pinched and clogged making it hard to breathe.*

"Name one thing that can make asthma worse." *Responses may include: cigarette smoke, dust from pillows, exercise, furry and feathered pets.*

"Remember how we made special plans for the trip to the park to keep from getting too thirsty or getting a sunburn? That way we could play all day. Well, someone with asthma can make a plan to keep healthy. They can do things to avoid asthma episodes and keep themselves from getting worse if they start an episode. That way children with asthma can run, play, and go to school just like anybody else."

Classroom Activity: Write on the chalkboard the things a child can do to prevent or control asthma episodes:

a. Avoid things that make asthma worse.

b. Take medicine.

c. Use a Peak Flow Meter.

An alternative, more interactive lesson is to group children in threes. Each child in the group reads and then teaches the others in their group about one of the topics discussed below.

"Let's talk about each one of the things that a child can do to control their asthma."

a. Avoid things that make asthma worse.

"Many asthma episodes can be avoided. One of the most important ways to keep from having an asthma episode is to stay away from things that make asthma worse. For example, when Janie is around furry and feathered pets, her airways swell up and she starts to have trouble breathing. The longer she stays around the pet, the worse she feels. How could Janie prevent an asthma episode?" ***Response: Stay away from the pet.***

"What things could she do to keep an asthma episode from getting worse if she had already handled the pet?" ***Response: Go into another room. Wash her hands and face. Take her asthma medicine.***

Give additional examples such as staying away from other things such as cigarette smoke and paint as time allows.

"Exercise, running, and playing hard can make some children's asthma worse. But it's important to exercise and to stay healthy. Children with asthma often take medicine before or during exercise to avoid an asthma episode. They just have to plan ahead, just like we planned for our trip on a sunny, hot day."

b. Take medicine.

Background Note: Scientific advances have changed our understanding of asthma. We now know that asthma is not a condition with isolated episodes (attacks). It is a chronic condition that makes the airways overly sensitive. Chronic inflammation (swelling inside the airways) is the main contributor to this airway sensitivity. Treatment for people with anything more than mild, occasional episodes includes daily therapy with anti-inflammatory medicines that prevent or reduce inflammation. This helps reduce the sensitivity of the airways and prevent episodes. Doctors usually prescribe this medicine so students can take it before and after school, but sometimes it is necessary to take preventive medicine during school hours. Both medicine taken on a regular preventive basis *and* medicine needed to control an asthma episode should be available and convenient for the student at school. Many students can even carry and self-administer their medicine. If your students with asthma have difficulty getting their medicine, please discuss this with the parent, school nurse, and school principal. Children take medicine in different ways including pills, inhalers, syrups and nebulizers, students should never share medicines.

"Many people take medicine to keep asthma episodes from happening. Some children may take it every day. Taking medicine every day even when they feel fine is very important because it keeps their airways from getting swollen and more sensitive. Children with asthma can keep their airways open and feeling fine by taking their asthma medication. Some children take medicine just before exercise. This medicine helps stop the muscles from squeezing the airways."

"Children take another kind of medicine after they start to have trouble breathing during an asthma episode. When an episode starts, it is very important to start taking medicine right away. This stops the problem before it gets too big. If children with asthma take their medicine right away, they usually will feel better quickly and be able to go back to their activities. If they don't take their medicine right away, the breathing problems may get so difficult that they have to stop their activities and take even more medicine. It's like putting out a fire. If a fire is small, you can put it out quickly with a little water. If you wait, the fire gets bigger and it takes lots of water, fire trucks, and lots of help to stop it. Just like our plan for our trip, children with asthma have a plan for dealing with an asthma episode."

"An asthma episode can be mild or serious. A mild episode can make someone cough or be short of breath for a little while. When the episode is serious, people may wheeze and have a lot of trouble getting enough air. Whether the episode is mild or serious, children with asthma need to follow the plan that they worked out with their doctor and family to stop their asthma episode. They may need to take medicine, see their doctor, or even go to a hospital. But, most asthma

episodes can be controlled before they get serious. That's why it is so important to act right away once the first signs of an asthma episode are noticed."

c. Use a peak flow meter.

"Some people use a tool called a peak flow meter to tell them how much air they are getting in and out of their airways. Just as we use a thermometer to tell us if we have a fever and need medicine, a peak flow meter can tell people who have asthma if an asthma episode is about to happen and they need to take medicine."

Additional Activity: If there is a child in the class with asthma, s/he may volunteer to talk about his/her asthma and show his/her medicine and peak flow meter. The school nurse, a volunteer from a hospital, or a parent can be invited to come and give a demonstration of the peak flow meter comparing the readings before and after exercise for the whole class or on a few students. The person could also demonstrate asthma medicines.

Check for Understanding

"Can you name one thing people with asthma can do to control their asthma?" *Avoid things that make asthma worse, take medicine, use a peak flow meter.*

"How can medicine be used for asthma?" *Response: some medicine is used to prevent an asthma episode. Other medicine is used to stop or reduce an episode that already has started.*

Instruction

"People with asthma feel fine most of the time. They don't want to be treated differently. When they do have an asthma episode, it is important to be kind and helpful."

Classroom Activity: If you have already instructed students in problem solving, use your model/format. In the scenario, the problem can be "solved" from Joe's point of view or from that of the rest of the class. Have the students "solve" it from the class's point of view first. If time permits, you can go through the steps as if you were Joe.

Scenario:

"Joe doesn't want to take his asthma medicine before his PE class or recess because other kids tease him about it. They say mean things. One kid called him a druggie. Some kids even hide his medicine from him. Joe feels hurt, angry, and embarrassed. During the PE class, many of the kids don't want Joe to be on their team because he often ends up having an asthma episode."

Problem Solving Steps	**Teacher Key for Scenario**
1. Define the problem	Kids are mean to Joe
2. Identify the alternatives	Keep teasing and being mean *or*
	Be kind by asking Joe to join teams, not teasing him, and reminding him to take his medicine.
3. Identify the consequences	Being mean could get students into trouble with the teacher; could make them feel bad; make Joe angry with them and/or cause Joe harm.
	Being helpful would make Joe feel better; students would not get into trouble; they could feel good about their actions.
4. Make a decision and act	Being helpful and kind to Joe would result in the most positive consequences.
5. Evaluate the decision; modify as needed	

Divide the class into groups of 4–5 students. Distribute one scenario (use the *Scenarios* sheet) to each group. Ask each group to identify a recorder, a reporter, a timekeeper, and one or two people to keep the group on the task. Have them discuss the questions and record their answers. Debrief the small group responses with the entire class. Summarize helpful and kind things students can do for someone with asthma. This may include: no teasing, no pressure to do things or stay around things that make the asthma worse, letting them take their medicine without making a big deal about it, reminding them to take their medicine before exercise when applicable, and helping during an asthma episode by getting adult help.

Select the scenarios that are most appropriate for your students. You can develop additional scenarios or encourage students to work on a problem that actually happened in your class or school. Working through the scenarios is an excellent way to reinforce a social climate which supports a child with asthma or other conditions. During your discussion help students recognize that behavior like hiding a medicine or making someone with asthma be around something that can make his/her asthma worse can be very dangerous. It can make the student sick and perhaps lead to a very serious asthma episode.

Additional Language Arts Activity: Have students write to the child in their scenario who has asthma, giving the child suggestions of how she/he could respond to their classmates.

Additional Dramatic/Performing Arts Activity: Have students practice and perform scenarios as skits for the class. If time allows, you can make this section more active by having students write responses to the following questions on cards and show to the rest of the class.

Classroom Activity:

Question:

"We've identified ways we can be helpful to people with asthma. What signs or symptoms might make you think you might have asthma?" *Responses include coughing, trouble catching my breath after exercise, coughing when I am around chalk dust.*

Background Note: Most children will cough when exposed to chalk dust or may be short of breath after vigorous exercise. This does not mean that the child has asthma. A child without asthma will recover quickly, without medicines. A child with asthma may require medicine to recover.

Question:

"Now I would like you to think about what you would do if you thought you had asthma." *Responses should include telling parent(s)/guardian, school nurse and/or other trusted adult.*

Question:

"How can we help classmates with asthma?" *Responses should include: children with asthma in all activities, do not make fun of their medicine, help them stay away from the things that make their asthma worse. If needed, remind students that they can not catch asthma from each other.*

"The sooner people find out that they have asthma, the easier it will be to control and avoid serious asthma episodes and lead a life full of activities."

Finish

Closure

"Today you have learned ways that people can avoid and control asthma episodes by taking medicine, avoiding the things that make asthma worse, and using a peak flow meter. When people with asthma keep it under control, they can run, play, and go to school like everyone else. We also learned that we can help people with asthma by including them in activities, reminding them to take their medicine, and not teasing them."

Classroom Activity: Administer posttest. Review correct responses.

Additional Language Arts Activity: Use crossword puzzle.

RESOURCES FOR TEACHERS

These organizations offer a variety of programs, groups, and resources for people with asthma, their families, teachers, and health professionals. Availability of services varies throughout the country:

National Heart, Lung, and Blood Institute
National Asthma Education Program
7200 Wisconsin Avenue
PO Box 329
Bethesda, MD 20814-4820
(301) 951-3260

Written materials and programs for people with asthma, their families, teachers, and other school personnel.

AAFA/Asthma and Allergy Foundation of America
1125 15th Street NW
Suite 502
Washington, DC 20005
(202) 466-7643 or 1-800-7ASTHMA

The Asthma and Allergy Foundation of America (AAFA) is a private, nonprofit organization dedicated to finding a cure for and educating the public about asthma and allergies. With over 150 support groups and chapters across the country, AAFA offers community workshops, a clearing-house of practical information, and separate newsletters for patients, support group leaders, and teens with asthma.

Allergy and Asthma Network/Mothers of Asthmatics, Inc.
3554 Chain Bridge Road
Suite 200
Fairfax, VA 22030
1-800-878-4403

The Allergy and Asthma Network/Mothers of Asthmatics, Inc. is a nonprofit organization dedicated to assisting allergy and asthma patients and their families. AAN/MA provides reliable and practical information, support and resources to individuals with allergies and asthma that will make it easier to manage their conditions. Membership is $25 a year and includes a monthly newsletter and discounts on allergy/asthma products and resources.

American Lung Association (ALA)
1740 Broadway
New York, NY 100019-4374
1-800-LUNG-USA

The 800 phone number connects you directly with your local American Lung Association (ALA office). Local ALA chapters (phone number in you local telephone directory) feature "Open Airways for Schools," a comprehensive elementary school-based asthma program for children with asthma. One program can serve an entire school and can be used repeatedly. (To order the program, contact your local ALA or call 1-800-292-5542). Also available are educational materials, support groups, speakers, asthma camps and community-based programs for children with asthma, their families, school personnel and health care professionals.

Healthy Kids: The Key To Basics
Ellie Goldberg, M.Ed., Educational Rights Specialist
79 Elmore Street
Newton, MA 02159
(617) 965-9637

Written materials on the rights of students with asthma and other chronic conditions

Kids on the Block
9385-C Gerwig Lane
Columbia, MD 21046
1-800-368-KIDS

Books, puppets, and videos which deal with childhood issues such as asthma, cerebral palsy, child abuse, and deafness. There are puppet troupes in locations throughout the country available for performances.

BOOKS ON HEALTH AND ASTHMA FOR CHILDREN

So You Have Asthma, Too, (book and video) Nancy Sander, Allergy and Asthma Network
A colorful story that will delight children as they learn more about asthma.

Thin Air, David Getz, Henry Holt Company
Older elementary children can read this story about one boy's attempt to deal with his asthma.

Hometown Hero, Barbara Aiello and Jeffrey Shulman, Twenty-First Century Book
Scott Whittaker, the Kids on the Block character, deals with his asthma, friendships, and growing up. The book has a question-and-answer section which provides asthma information in a useful format for children of all ages.

The Well Child Coloring Book, Mike Samuels, MD, Summit Books
Subtitle "A Child's Guided Tour Through the Body" this book does just that. With simple explanations and line drawings, the child learns about body systems.

Winning over Asthma, Eileen Savage, Pedipress
This story of one child with asthma is a read aloud book for the younger elementary child.

I'm a Meter Reader, (book and video) Nancy Sander
A story that teaches children about peak flow meters.

Dear Parents:

In school today we learned about asthma. More than 3 million children have asthma. It is the leading cause of school absences. Asthma is causing more hospitalizations and deaths each year. Many families don't know if their children have asthma or how to treat it well. If you notice any of these signs, talk with your family's doctor, clinic, or school nurse:

Common signs of uncontrolled asthma:

- ❑ A cough that lasts a long time after a cold
- ❑ Coughing all throughout the day
- ❑ Coughing during the night or early morning
- ❑ Coughing, wheezing, chest tightness, or shortness of breath after vigorous physical activity or activity in cold, windy weather
- ❑ Little energy for active play
- ❑ Coughing, wheezing, chest tightness or shortness of breath even though the child is taking medicine for asthma
- ❑ Using extra asthma medicine to stop coughing, wheezing, chest tightness, or shortness of breath

With regular medical care and the right treatment, children with asthma can live active, healthy lives!

Estimado(s) Padre(s):

Hoy en la escuela aprendimos tocante el asma. Más de 3 millones de niños tienen asma. Es la causa principal de ausencias de la escuela. Asma esta causando más hospitalizaciones y muertes cada año. Muchas familias no saben si sus hijos tiene asma o como tratarla bien. Si usted nota cualquier de las siguientes indicaciones, hablen con su médico, clinica, o enfermera de la escuela:

Señales común de asma ingobernable:

- ❑ Una tos que dura un tiempo largo después de un resfiado.
- ❑ Tociendo durante todo el día.
- ❑ Tociendo durante la noche o temprano en la mañana.
- ❑ Tociendo, respirando con dificultad, tension en el pecho, o corto de resuello después de actividad vigorosa física o actividad en lo frío, o tiempo de vientos.
- ❑ Poca enérgia para actividad de juego.
- ❑ Tociendo, respirando con dificultad, tension en el pecho, o corto de resuello aunque el/la niño/a esta tomado medicina para la asma.
- ❑ Usando medicina extra para la asma para parar la tos, respirando con dificultad, tension en el pecho, o el corto de resuello.

¡Con cuidado médico regular y el tratamiento propio, niños con asma pueden vivir vidas activas y saludables!

Pre/Post Test (Grades K–3)

Circle the right answers:

If I think I have asthma I can get help from:

The things that can make asthma worse are:

A child with asthma can:

Draw a picture of how you might help a friend with asthma.
(For grades 2–3, list the things you might do to help a friend)

Draw a picture of something a person with asthma can do to stay healthy. (For grade 2–3, list the things a person with asthma can do to stay healthy)

Pre/Post-Test (Grades 4–6)

Asthma affects the _____ in the lungs which are part of the _____ system.

Four things that can make asthma worse are _____ , _____ , _____ , and _____ .

When a person is having an asthma episode, I might see signs and symptoms such as

_____ , _____ , _____ , and _____ .

If I think I might have asthma, I can get help from people like _____ ,

_____ , and _____ .

I can help my friend deal with his/her asthma by _____ or _____ .

Write in the blank if the statement is **True** or **False**.

_____ Children with asthma can run and play like their friends who do not have asthma.

_____ I can catch asthma from a friend, just like a cold or flu.

_____ Furry pets are one of the things which make Kim's asthma worse, but it is OK if she plays with a cat for a just a little while.

_____ My friend with asthma probably doesn't mind if I tease him about using his medicine.

_____ Children with asthma have to miss a lot of school.

Asthma affects the **airways** in the lungs which are part of the **respiratory** system.

Four things that can make asthma worse are **exercise, pollen, animals,** and **colds, and cold air.**

When a person is having an asthma episode, I might see signs and symptoms such as **coughing, wheezing, chest tightness,** and **shortness of breath.**

If I think I might have asthma, I can get help from people like **parent, school nurse** and **doctor. (other trusted adult, teacher)**

I can help my friend deal with his/her asthma by **not teasing** or **including him in activities. (reminding him to take medicine, helping him stay away form things that make his asthma worse)**

True or False

True Children with asthma can run and play like their friends who do not have asthma.

False I can catch asthma from a friend, just like a cold or flu.

False Furry pets are one of the things which make Kim's asthma worse, but it is okay if she plays with a cat for a just a little while.

False My friend with asthma probably doesn't mind if I tease him about using his medicine.

False Children with asthma have to miss a lot of school.

Hidden Picture (Grades K–3)

In this classroom scene, find 7 hidden things that make asthma worse.
(A cigarette, pillow, dog, mouse, cat, spray bottle, and paint can)

Classroom Scene: Find The Things That Make Asthma Worse (Grades 4–6)

In this classroom scene, identify 8 things that make asthma worse.

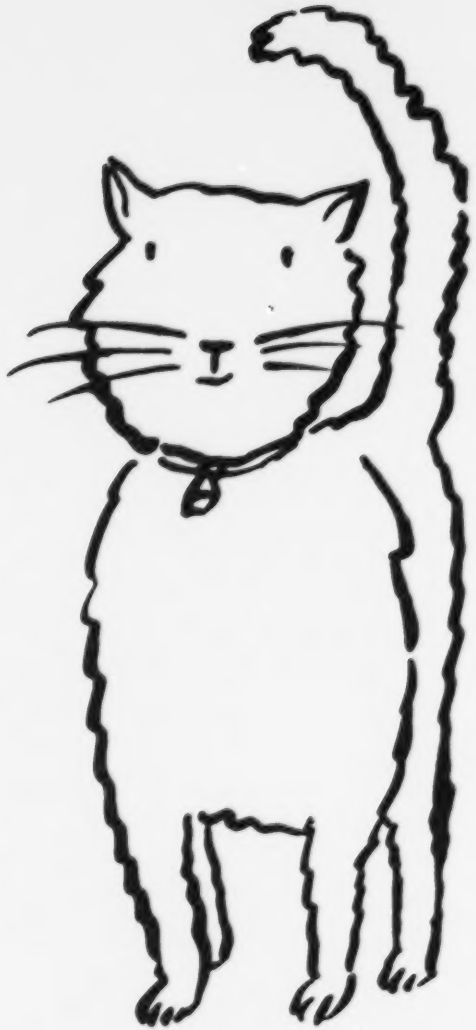
42

43

Smoking

What Makes Asthma Worse Cards

These cards are two sided. One side illustrates a problem, the other side illustrates examples of solutions.



44

Cat

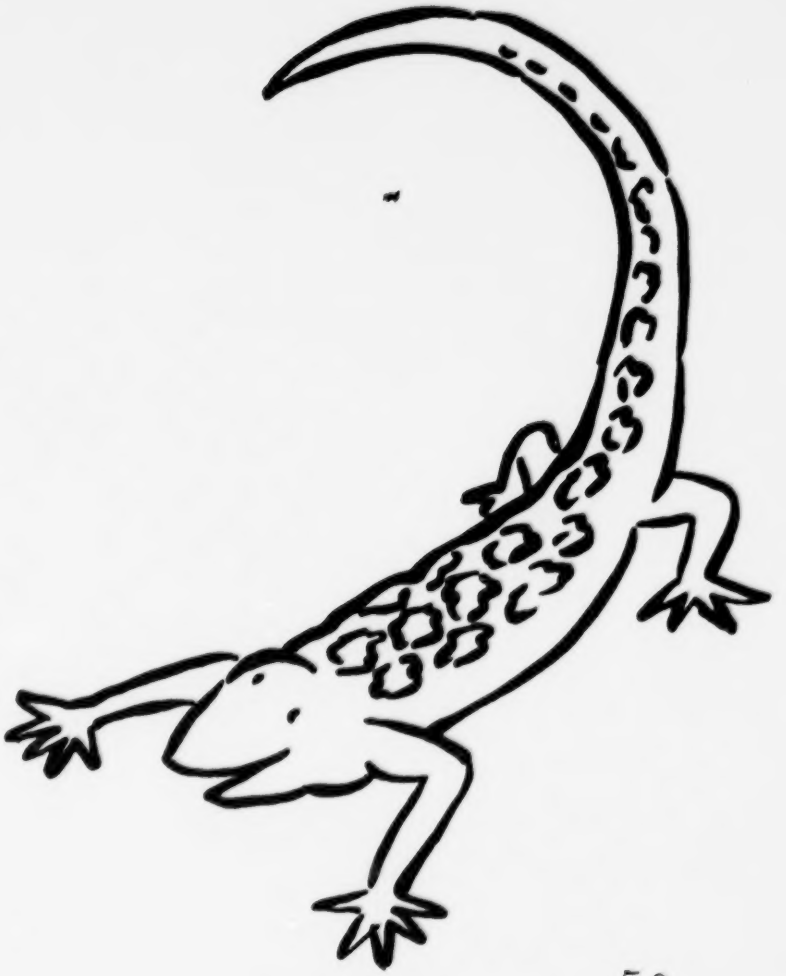
47 Dog

Hamster

48

What Makes Asthma Worse Cards

These cards are two sided. One side illustrates a problem, the other side illustrates examples of solutions.

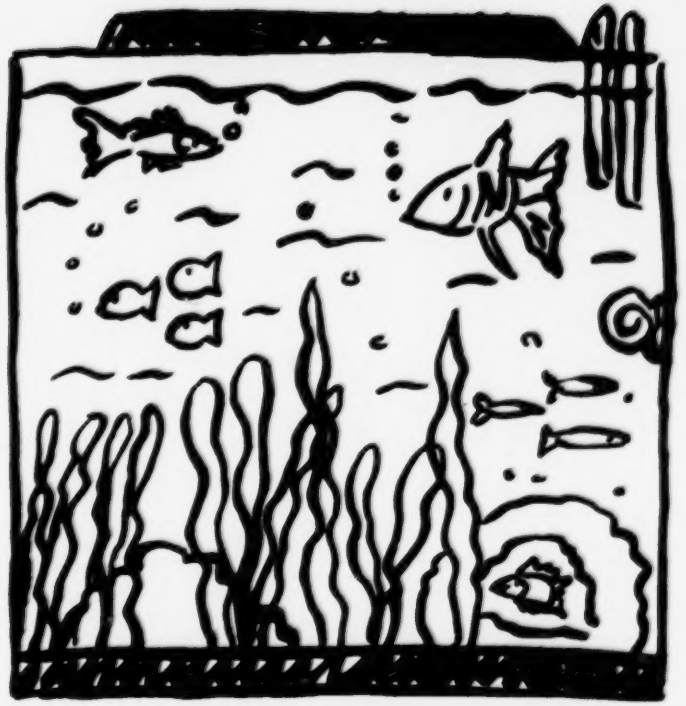


51

Gerbil

These cards are two sided. One side illustrates a problem, the other side illustrates examples of solutions.

Outside on a cold day



55

Exercise

What Makes Asthma Worse Cards

These cards are two sided. One side illustrates a problem, the other side illustrates examples of solutions.

Strong smells

56

59

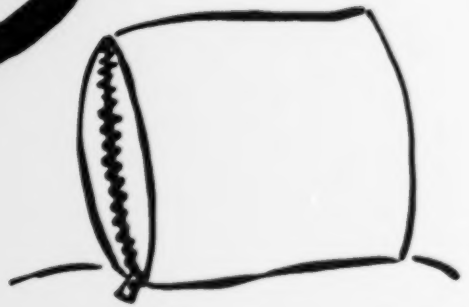
Having a cold

60

Feather pillows

What Makes Asthma Worse Cards

These cards are two sided. One side illustrates a problem, the other side illustrates examples of solutions.



63

Rug and pillows

64

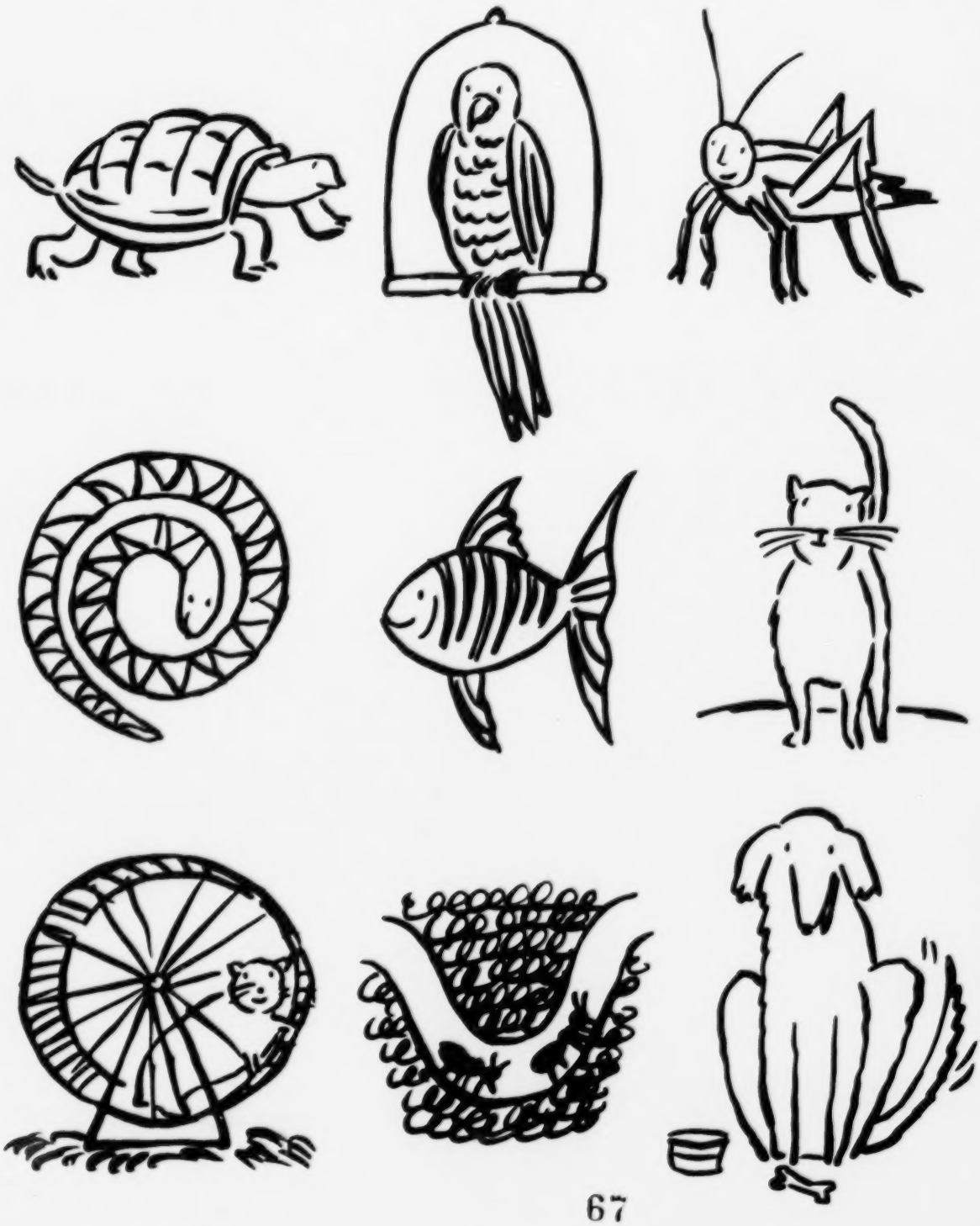
Cleaning erasers

What Makes Asthma Worse Cards

These cards are two sided. One side illustrates a problem, the other side illustrates examples of solutions.

Furry and Feathered Pets

Furry and feathered pets can make asthma worse for some children.
Put an X on the animals that can make asthma worse.



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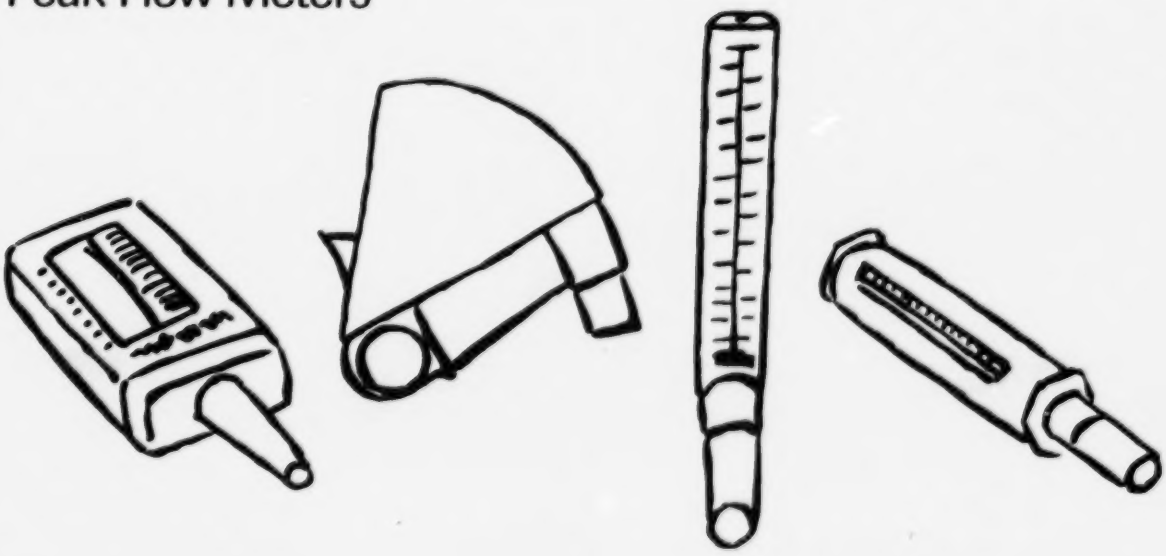
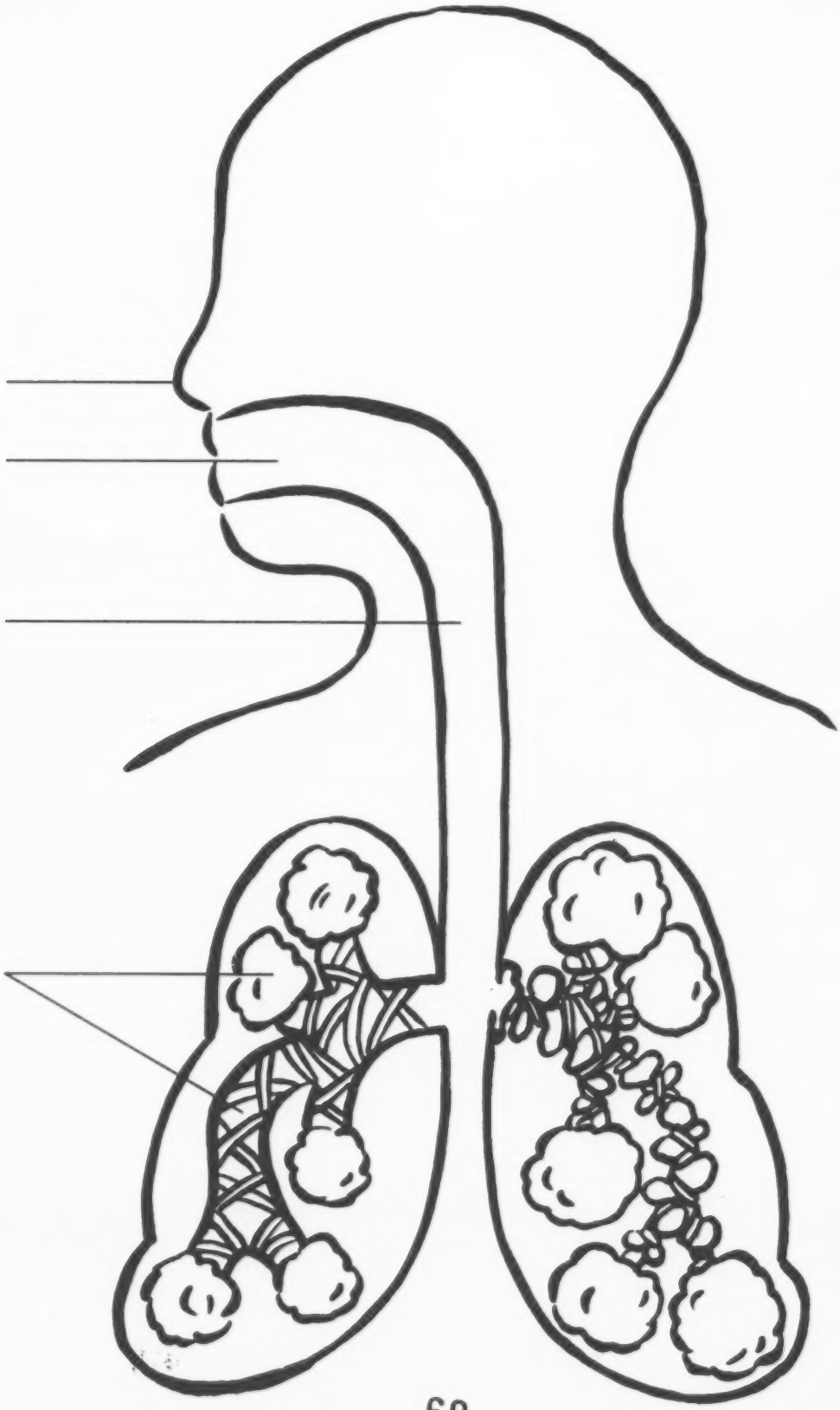
Asthma Medications

Peak Flow Meters



Respiratory System



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Asthma Maze

Help Katie get to the playground ready to have fun. Don't go near the things that could make her asthma worse. Treat her like a friend.

SCENARIOS

1. It is recess time. Everyone is outside on the playground running, climbing on the jungle gym, playing ball, and jumping rope. It is a windy, spring day with lots of pollen in the air. One of the things which brings on Juan's asthma is pollen. Juan is sitting all alone near the school with nothing to do.

2. Kesha's science team wants to learn about caring for animals for their science report. One of the things which brings on her asthma is a furry pet. Without this project the team will not get a good grade.

3. Joey is a new boy to our class. On one of his first days at school he had an asthma episode. Now he never joins the other children at active games during recess and stays to himself.

4. Maria is the best runner on the class relay team—if she remembers to take her asthma medicine and avoid asthma symptoms. She hates to take her medicine because she says it tastes yucky. She also says it makes her feel different and sick. The class really wants to win the school championship.

5. The prize for the winning class in a school contest is to have the school rabbit mascot "Little Bunny" live in the classroom for a month. There are two children with asthma in the classroom.

6. Jennifer is supposed to take her asthma medicine right before lunch. Each day she has to go to the nurse's room to get it, and this makes her a few minutes late getting to the cafeteria. When she gets to lunch she has to sit with a group of younger children because there is no seat with her class.

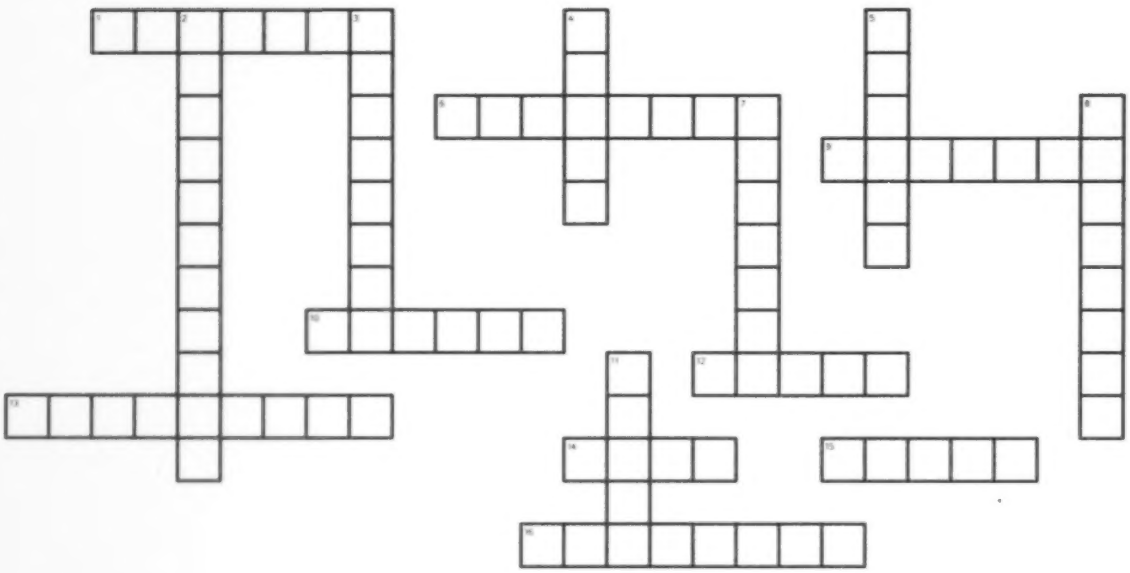
7. Each day when they jump rope before school, Kim sees that her friend Marta cannot seem to catch her breath even long after they have stopped jumping rope.

8. Kadir never has had asthma problems in school, and the teacher doesn't know about it. The teacher has given Kadir the job of clapping the very dusty erasers. This is one of the things that brings on his asthma.

9. Miguel plays for his class soccer team. Today there is an important game with a rival class. Exercise is one of the things which brings on his asthma. He has forgotten to bring his asthma medicine to school.

10. While putting together a display of old Native American crafts which had many furred items, Tran noticed that he could not stop coughing. He remembered that he did the same thing when he borrowed a friend's fur-lined gloves.

CROSSWORD PUZZLE



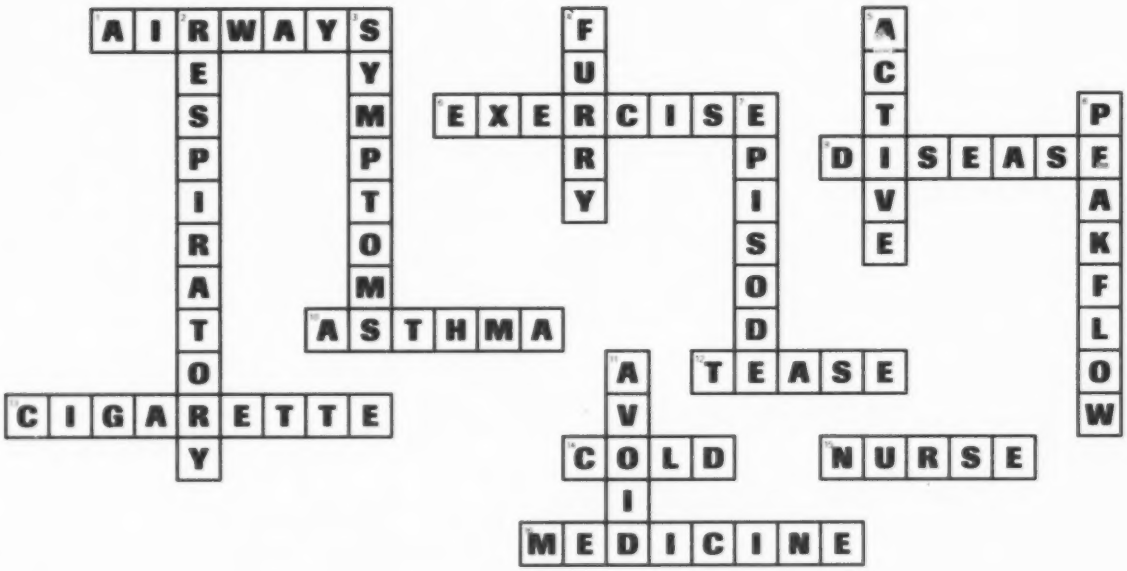
Across

1. In normal breathing, the _____ are open and air flows freely.
6. Some children with asthma take medicine before they _____.
9. A condition with a set of signs and symptoms.
10. A condition that affects the airways of the lungs.
12. If you _____ a friend with asthma, they may not take their medicine because they are embarrassed.
13. _____ smoke can make asthma worse.
14. A scarf around the face can help prevent asthma symptoms when it is _____ outside.
15. If you have a question about asthma you could ask the school _____.
16. Children with asthma may take _____ to keep asthma episodes from happening.

Down

2. _____ system: The parts of the body involved with breathing.
3. The _____: Physical changes or feelings which show a disease or condition exists.
4. _____ and feathered pets can make asthma worse in some children.
5. Children with asthma can be _____, healthy people.
7. Asthma _____: an event or series of asthma symptoms which may include coughing, wheezing, shortness of breath or difficulty breathing.
8. A _____ _____ meter shows how well air moves through the lungs.
11. Children with asthma must _____ the things that make asthma worse for them.

CROSSWORD PUZZLE ANSWERS



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